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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Michael L. Case

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EXAMINER

LUONG, ALAN H

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/670,064	Applicant(s) CASE, MICHAEL L.	
	Examiner ALAN LUONG	Art Unit 2427	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/26/2010 has been entered.

Claim Objections

2. Claim 1 is objected to because of the following informalities: At line 10 of claim, cites "*the second tuner second control line interface*" It should read as "*the second control line interface*". Appropriate correction is required.

Response to Arguments

1. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims **1-2, 4-9, 11-19 and 21-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Publication No. **2004/0012718** by **Sullivan** et al, in view of **US Patent 6,118,498** to **Reitmeier**; further in view of **US Patent 6,721,832** to **Ishibashi**

Regarding to claims 1, 8: Fig. 1 of Sullivan illustrates a Video system 100 as an apparatus support a method comprises:

A first tuner (i.e. a cable television receiver (CATV) 110) **to receive modulated video signals through a video connection** (i.e. input/output (I/O) cards having a PCI interface can be plugged into PCI connectors 221 which is coupling with PCI Bus 220 as shown in Fig. 2) **and to provide demodulated video signals;** (Sullivan, ¶0012, ¶0016)

A second tuner (i.e. a satellite television receiver (SATELLITE) 112) **to receive modulated video signals through a video connection and to provide demodulated video signals;** (Sullivan, ¶0012, ¶0016)

Fig. 1 of Sullivan also illustrates **a graphics controller [227] couples to a separate microcontroller** (i.e. A processor 202); **the microcontroller [202] coupled to the graphics controller [227] and to the respective control line interfaces** (PCI Bus [220]) **of the first and second tuners** (i.e. tuner of a cable television receiver (CATV) 110) and tuner of a satellite television receiver (SATELLITE) 112) ; (i.e. A processor (PROCESSOR) 202 is coupled to bus 220 for controlling the various components of video system 100 via a program of instructions executable by processor 202); (Sullivan, ¶0012)

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Sullivan also teaches user selects the program content from the first tuner in CATV receiver on the **generalized instructions** (i.e. Electronic Program Guide) **is generated by the graphics controller for controlling the first and second tuners** (i.e. request tuning at selected channel or switch to another channel depending on user 's selection on EPG) **and to send the instructions to the microcontroller** through PCI bus 220; **the instructions being generated in a third protocol** (i.e. Referring to fig. 3, When graphics controller 227 switches to a second video source, the output from the second video source is provided by graphics controller as a second video stream 314 over a second period of time. As a result of the switch from the first video source to the second video source **(a third protocol)**, a time delay period or transition 316 occurs between video stream 312 and video stream 314) **different from the first and second protocols; (Sullivan, ¶0020-¶0022) and the microcontroller receive the generalized instructions from the graphics controller in the third protocol** (Referring to Fig. 4, In the event no transition occurs, video is continued to be received from the first video source at step 410. In the event a transition occurs, a determination is made at step 420 during a time delay period or transition 316 of Fig. 3), **to identify a tuner** of second video source, **to which each instruction command is directed** (i.e. command to video overlay 122 overlays the transition video at step 426 during transition 316 to the second video source provides a video stream 314), **(Sullivan, ¶0022)**

However, Sullivan is silent with *“the first tuner having first control line interface separate from the video connection to receive commands in a first protocol specific to the first tuner at the first control line interface, the second tuner having second control line*

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interface separate from the video connection to receive commands in a second protocol different from the first protocol and specific to the second tuner at the second control line interface”.

In an analogous art directed toward a similar problem namely improving the results from *the first tuner having first control line interface separate from the video connection to receive commands in a first protocol specific to the first tuner at the first control line interface, the second tuner having second control line interface separate from the video connection to receive commands in a second protocol different from the first protocol and specific to the second tuner at the second control line interface*

Fig. 1 of Reitmeier illustrates an ATSC receiver 100 as **the apparatus** includes:

The first tuner (i.e. a first tuner 10A) **having first control line interface** (i.e. a control signal TA from CPU of Controller [70]) **separate from the video connection to receive commands in a first protocol specific to the first tuner at the first control line interface** (i.e. The first tuner 10A and first demodulator 15A form a first tuner/demodulator pair for demodulating a plurality of television signals modulated according to a vestigial sideband (VSB), quadrature amplitude modulation (QAM) by control line TA);(Reitmeier, col. 3 lines 34-48)

The second tuner (i.e. A second tuner 10B) **having second control line interface** (i.e. a control signal TB from CPU of Controller [70])) **separate from the video connection to receive commands in a second protocol** (i.e. demodulating desired VSB signal by control line TB) **different from the first protocol and specific to the second tuner at the second control line interface** (i.e. The second tuner 10B and

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second demodulator 15B form a second tuner/demodulator pair for demodulating a desired television signal modulated according to a vestigial sideband (VSB), by control line TB); **(Reitmeier, col. 3 lines 49-57).**

Therefore, it would have been obvious to a person having an ordinary skill in the art at the time of the invention was made to modify a video system with multiple tuners of Sullivan including *control line to receive commands in a first/second protocol as taught by Reitmeier to provide a method and apparatus for providing a rapid, or seemingly rapid, channel change or channel acquisition capability in a ATSC television receiver; (Reitmeier, col. 2 lines 8-11).*

However, neither Reitmeier nor Sullivan is silent with **converting the instructions from the third protocol to the protocol for the identified tuner, and to transmit the converted commands to the respective identified tuner through the respective control line interface of the respective tuner.**

In an analogous art directed toward a similar problem namely improving the results from **to convert the instructions from the third protocol to the protocol for the identified tuner, and to transmit the converted commands to the respective identified tuner through the respective control line interface of the respective tuner**

Fig. 2 of Ishibashi illustrates a timing chart of a standard bus cycle of a PCI bus [200]

Includes **the respective control line interface of the respective tuner** (i.e. the initiator outputs a valid channel number (Ch No.) associated with PCI device transmission side, onto a 32-bit address/data (AD) line in place of an I/O address or memory address), a 4-

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bit command/byte enable signal (C/BE#) line is a bus command (S) indicating stream access, **the protocol for the identified tuner** (i.e. an initiator ready signal (IRDY#) line for indicating the ready state of a master device (initiator) (i.e. PCI device transmission side), a target ready signal (TRDY#) line for indicating the ready state of a target device (i.e. , and a select signal (DEVSEL) line for indicating that the target device (PCI device received side) has been selected by the channel number asserts on stream access **from the third protocol; (Ishibashi, col. 4 lines 15-19, col. 5 lines 14-27 and Fig. 6, col. 6 lines 8-30).** Fig. 3 of Ishibashi illustrates a table for **converting the instructions from the third protocol to the protocol for the identified tuner** (i.e. the relationship between the bus commands specifiable in the address phase and the types (command types) of bus cycles corresponding to these commands); **(Ishibashi, col. 5 lines 2-11)** meets the limitation of claim “**converting the instructions from the third protocol to the protocol for the identified tuner, and to transmit the converted commands to the respective identified tuner through the respective control line interface of the respective tuner**” Therefore, it would have been obvious to a person having an ordinary skill in the art at the time of the invention was made to modify multiple tuners receiver including *a graphics controller and a separate microcontroller* of Reitmeier and Sullivan include conversion the instructions from the third protocol to the protocol for the identified tuner through PCI bus as taught by Ishibashi determining the resources (containing memory addresses, I/O addresses, or the like) of the CPU, the register specifications and the like for the devices to be accessed . **(Ishibashi, col. 1 lines 61-65)**

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Regarding to claim 2: The apparatus of Claim 1, Ishibashi also teaches **wherein the tuner further generates command responses in the first protocol** (i.e. Tuner [20] of CATV receives A/V stream begins to function as an initiator and executes a Bus command as shown in Fig. 3 and a bus cycle for stream access as shown in Fig. 6) **(Ishibashi, col. 5 lines 2-11, col. 6 lines 8-30) and wherein the microcontroller receives the command responses, converts them to the third protocol** (i.e. sets the tuner module 20 as a transmission-side (OUT) device on channel 1 and the media processor 16 as a reception-side (IN) device on channel 1) **and transmits the converted command responses to the graphics controller** (i.e. as media processor [16]) where carries out the process of decoding and reproducing the MPEG-2 transport stream). **(Ishibashi, col. 6 lines 38-60)**

Regarding to claim 4: The apparatus of Claim 1, combined with “wherein the first tuner first control line interface” of Reitmeier, **Fig. 2 of Sullivan** illustrates an **input/output interface** (i.e. PCI Bus 220 is coupled to an input/output (I/O) cards having a PCI interface can be plugged into PCI connectors 221) **to communicate data and control signals in the first protocol to external devices** (i.e. video sources 110-120 of Fig. 1) **and wherein the microcontroller is coupled to the input/output interface** (i.e. Bus 220 is coupled to an input/output (I/O) cards and processor [202]); **(Sullivan, ¶0016)**

Further, combined with Reitmeier and Sullivan, Fig. 3 of Ishibashi shows the relationship between **convert data and control signals between the first protocol and the third protocol** as discussed in claim 1; see **(Ishibashi, col. 5 lines 2-11)**

Regarding to claim 5: The apparatus of Claim 1, Fig. 2 of Sullivan illustrates **wherein the graphics controller [227] comprises a system processor (i.e. a system controller [212] coupled to the microcontroller [202] to generate the commands in the first protocol to control the tuner and to control other functions of the apparatus. (Sullivan, ¶0014, ¶0015)**

Regarding to claim 6: The apparatus of Claim 1, Fig. 5 of Ishibashi shows a **look-up table for the tuner (i.e. the contents of the channel control register) and wherein the microcontroller converts the generalized instructions (i.e. Control information about each channel) by applying the generalized instructions in the third protocol to the look-up table. (Ishibashi, col. 5 line 46 to col. 6 line 4)**

Regarding to claim 7: The apparatus of Claim 1, Sullivan further teaches “detecting the station selected or entered by a user and comparing the selected station to an electronic program guide database that indicates the content of the signal received on the selected station and the time of the broadcast, example: a user may be watching a golf tournament on a particular station of cable television receiver 110 associated with an information handling system of a golf club manufacturer coupled to the Internet via network 118”; **(Sullivan, ¶0022) meets the limitation of claim “an instruction stack specific for the tuner and wherein the microcontroller converts the generalized instructions by applying instructions from the tuner-specific instruction stack”.**

Regarding to claim 9: The method in claim 9 has the same limitation in claim 2, so, claim 9 is rejected the same ground with claim 2

Regarding to claim 11: With respect to the method claim 11, as discussed above since the apparatus disclosed every structural element and its function required by apparatus claim 6 and since this method in claim 11 merely repeat the limitation of claim 6, claim 11 have the same ground rejection as claim 6.

Regarding to claim 12: With respect to the method claim 12, as discussed above since the apparatus disclosed every structural element and its function required by apparatus claim 7 and since this method in claim 12 merely repeat the limitation of claim 7, claim 12 have the same ground rejection as claim 7.

Regarding to claim 13: With respect to the method claim 13, as discussed above since the apparatus disclosed every structural element and its function required by apparatus claim 1 and since this method in claim 13 merely repeat the limitation of claim 1, claim 14 have the same ground rejection as claim 1.

Regarding to claim 14: With respect to the method claim 14, as discussed above since the apparatus disclosed every structural element and its function required by apparatus claim 2 and since this method in claim 14 merely repeat the limitation of claim 2, claim 14 have the same ground rejection as claim 2.

Regarding to claim 15: The medium of Claim 13, further comprising instructions which, when executed by the machine, cause the machine to perform further operations comprising:

Combined with Reitmeier and Ishibashi, Sullivan further teaches **receiving at the microcontroller from the graphics controller generalized instructions in the third**

protocol for the second tuner; (i.e. user sends command to switch channel on EPG display, Graphics controller receives this command as a third protocol and transmits this command to system control [212] for **converting the second tuner generalized instructions to the second protocol** where microprocessor [202] controls the second tuner (i.e. Satellite receiver 112 of Fig. 1) **transmitting the second protocol commands to the second tuner** to demodulate the modulated signal into a second video signal [314] as shown on Fig. 3 (**Sullivan**, Fig. 2 and ¶0022)

Regarding to claim 16: With respect to the method claim 16, as discussed above since the apparatus disclosed every structural element and its function required by apparatus claim 6 and since this method in claim 16 merely repeat the limitation of claim 6, claim 16 have the same ground rejection as claim 6.

Regarding to claim 17: With respect to the method claim 17, as discussed above since the apparatus disclosed every structural element and its function required by apparatus claim 7 and since this method in claim 17 merely repeat the limitation of claim 7, claim 17 have the same ground rejection as claim 7.

Regarding to claim 18: With respect to the video tuner claim 18, Herein:

Fig. 2 of Sullivan illustrates **a system processor** [212] receives command when user selects program on **generalized instruction** (i.e. EPG) on the selecting channel in **a third protocol to control at least one of tuners**

A microcontroller [202] **coupled to the system processor** by Host bus [210] **and to the first and second control line interface** (i.e. PCI bus [220])

Additionally, Fig. 1 of Reitmeier illustrates **the first tuner unit** [10A] has a **first control line** (i.e. control line TA) associated with first protocol and **the second tuner unit** [10B] has a **second control line** (i.e. control line TB) associated with second protocol.

The video tuner in claim 18 merely repeats the same limitation as an apparatus claim 1 claim 18 must also be rejected for the same reason as discussed in claim 1.

Regarding to claim 19: With respect to the video tuner in claim 19, as discussed above since the apparatus disclosed every structural element and its function required by apparatus claim 2 and since the video tuner in claim 19 merely repeat the limitation of claim 2, claim 19 have the same ground rejection as claim 2.

Regarding to claim 21: With respect to the video tuner claim 21, merely repeat the limitation of claim 4; claim 21 have the same ground rejection as claim 4.

Regarding to claim 22: With respect to the video tuner in claim 22, as discussed above since the video tuner disclosed every structural element and its function required by apparatus claim 6 and since the video tuner in claim 22 merely repeat the limitation of claim 6, claim 22 have the same ground rejection as claim 6.

Regarding to claim 23 With respect to the video tuner claim 23, merely repeat the limitation of claim 7; claim 23 have the same ground rejection as claim 7.

4. Claims **3, 10, 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Publication No. **2004/0012718** by **Sullivan et al**, **US Patent 6,118,498** to **Reitmeier**,; and **US Patent 6,721,832** to **Ishibashi**; in view of US Publication No. **2004/0078820** by **Nickum**

Regarding to claim 3: The apparatus of Claim 1, Sullivan, Reitmeier and Ishibashi are silent with a third tuner to receive a modulated video signal through a video connection, the third tuner having third control line interface separate from the video connection to receive commands in a fourth protocol specific to the third tuner, and wherein the microcontroller receives generalized instructions from the graphics controller for the third tuner in the fourth protocol, converts them to the fourth protocol, and transmits them to the third tuner.

In an analogous art directed toward a similar problem namely improving the results from a third tuner to receive a modulated video signal through a video connection,

Fig. 2 of Nickum illustrates **a third tuner** (i.e. a television tuner as an I/O device) for **receiving a modulated video signal through a video connection**, (i.e. programming from a local airwave broadcast station 214) ;(**Nickum, ¶0027**). Therefore, it would have been obvious to a person having an ordinary skill in the art at the time of the invention was made to modify multiple tuners receiver including *a graphics controller and a separate microcontroller* of Sullivan and Reitmeier includes a television tuner as disclosed by Nickum to allow the user may use the electronic program guide to determine when his or her favorite program may be scheduled such that he or she could be home to watch the program at the scheduled broadcast time. If a user was unable to be home at the scheduled time, the user could program a videocassette recorder (VCR) to record the television program while the user was away from home so that the program could be viewed at a later time. (**Nickum, ¶0004**).

Further, combined with teaching “a third tuner” of Nickum; Fig. 2 of Sullivan illustrates a **microcontroller [202] coupled to the system processor** by Host bus [210], where receives command when user selects program on **generalized instruction** (i.e. EPG) on the selecting channel in a **fourth protocol** to control at least one of tuners

Additionally, combined with teaching “a third tuner” of Nickum, Fig. 1 of Reitmeier illustrates an ATSC receiver 100 as **the apparatus** includes **the third tuner** (i.e. another tuner) **having third control line interface** (i.e. another control signal from CPU of Controller [70]) **separate from the video connection to receive commands in a fourth protocol specific to the third tuner at the fourth control line interface** (i.e. The first tuner 10A and first demodulator 15A form a first tuner/demodulator pair for demodulating a plurality of television signals modulated according to a vestigial sideband (VSB), quadrature amplitude modulation (QAM) by control line TA);(Reitmeier, col. 3 lines 34-48)

Finally, combined with teaching “a third tuner” of Nickum and “control line” associated with fourth protocol of Reitmeier. Fig. 3 of Ishibashi illustrates a table for **converting the instructions from the fourth protocol, and transmits them to the third tuner** (i.e. the relationship between the bus commands specifiable in the address phase and the types (command types) of bus cycles corresponding to these commands are executed by CPU [11] of Fig. 1); (Ishibashi, col. 4 lines 15-19, col. 5 lines 2-11, lines 14-27 and Fig. 6, col. 6 lines 8-30) meets the limitation of claim “*the third tuner having third control line interface separate from the video connection to receive commands in a fourth protocol specific to the third tuner, and wherein the microcontroller receives*

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generalized instructions from the graphics controller for the third tuner in the fourth protocol, converts them to the fourth protocol, and transmits them to the third tuner".

Regarding to claim 10: The method in claim 10 has the same limitation in claim 3, so, claim 10 is rejected the same ground with claim 3

Regarding to claim 20: With respect to the video tuner in claim 20, as discussed above since the apparatus disclosed every structural element and its function required by apparatus claim 3 and since the video tuner in claim 20 merely repeat the limitation of claim 3, claim 20 have the same ground rejection as claim 3.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALAN LUONG whose telephone number is (571)270-5091. The examiner can normally be reached on Mon.-Thurs., 8:00am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Beliveau can be reached on (571) 272-7343. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ALAN LUONG/
Examiner, Art Unit 2427

/Scott Beliveau/
Supervisory Patent Examiner, Art Unit 2427